

What is claimed is:

1. A probe for non-destructive testing of items, the probe being movable and rotatable over the surface of a test item and including a receiver for receiving a return signal from the non-destructive testing of the item and including displacement means for providing a displacement signal indicative of the spatial displacement of the probe over the test item as the probe is moved over the test item and the displacement means being arranged to provide information on the rotational orientation of the probe if the probe is rotated.
2. The probe as claimed in claim 1, wherein the displacement means includes a sensor mounted to the probe and being capable of providing the displacement signal.
3. The probe as claimed in claim 1, wherein the sensor is equivalent to sensors provided in computer mice.
4. The probe as claimed in claim 3, wherein the sensor is an optical sensor similar to those utilised in computer mice.
5. The probe as claimed in claim 2 wherein the sensor is one of two or more sensors and wherein the displacement means is arranged so that information on the rotational orientation of the probe is derived from the movement of the sensor relative to the test item.
6. The probe as claimed in claim 1 comprising non-destructive testing (NDT) data acquisition, processing and analysis electronics in one housing.

7. The probe as claimed in claim 6 wherein the probe, together with a computer for data storage and data display, forms a complete NDT system.

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8. The probe as claimed in claim 6 wherein the probe is operatively connectable with the computer using a single USB cable.

10 9. The probe as claimed in claim 7 wherein the probe is operatively connectable with the computer using a radio USB connection.

10. The probe as claimed in claim 6 wherein the probe  
15 comprises computer memory for data storage in one housing.

11. The probe as claim in claim 10 wherein the probe comprises a display in one housing and forms a complete NDT system.

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12. An apparatus for processing a signal from a probe as claimed in claim 1, to provide data on the position of the probe as it moves over a test surface.

25 13. A non-destructive testing system comprising a probe as claimed in claim 1 and an apparatus for processing a signal from the probe to provide data on the position of the probe as it moves over a test surface.

30 14. A probe for non-destructive testing of items, the probe being arranged to provide positional information of displacement of the probe over the item, the probe being movable and rotatable over the surface of the item and

- 19 -

including a displacement sensor means for providing a displacement signal indicative of the spatial displacement of the probe over the test item, the displacement sensor means also being arranged to provide information on the 5 rotational orientation of the probe if the probe is rotated.

15. The probe as claimed in claim 14 comprising data acquisition, processing and analysis electronics in one 10 housing and the probe forming, in combination with a typical standard computer, a useable NDT system.

16. A probe for non-destructive testing of items, the probe being movable over the surface of a test item and 15 comprising

a receiver for receiving a return signal for the non-destructive testing of the item and

20 a displacement means for providing a displacement signal indicative of the spatial displacement of the probe over the test item as the probe is moved over the test item and

a support structure for holding the displacement means over the surface of the test item,

25 wherein the support structure and the displacement means are coupled in a manner so that the displacement means is moveable relative to the support structure.

17. The probe as claimed in claim 16 wherein the displacement means includes a housing having a lower 30 surface and the support structure is arranged to hold the lower surface of the housing on the surface of the test item.

- 20 -

18. The probe as claimed in claim 16 having a flexible coupling that couples the displacement means to the support structure.

5 19. The probe as claimed in claim 16 wherein the support structure has three legs with feet that are arranged in a tripod arrangement.

10 20. The probe as claimed in claim 17 wherein the support structure has three legs that are arranged in a tripod arrangement and wherein in use the three feet slide across the surface of a curved test item and the lower surface of the displacement means maintains contact with the surface even if the curvature of the surface is changing.

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21. The probe as claimed in claim 16 further comprising a handle portion and the handle are connected to the support structure by a pivotable connection.

20 22. The probe as claimed in claim 21 wherein the handle portion is connected to the support structure so that the area circumscribed by support positions at which in use the support structure contacts the surface of the test item has a diameter larger than the height of the  
25 pivotable connection over the area.

23. A probe for non-destructive testing of items, the probe being movable over the surface of a test item and comprising

30 a receiver for receiving a return signal from the non-destructive testing of the item and  
a displacement means for providing a displacement signal indicative of the spatial displacement of the probe

- 21 -

over the test item as the probe is moved over the test item and

a support structure for supporting the displacement means on the surface of the test item

5 wherein the support structure comprises legs that are arranged in a tripod arrangement.

24. A probe for non-destructive testing of items, the probe being movable over the surface of a test item and  
10 comprising

a receiver for receiving a return signal for the non-destructive testing of the item and

15 a displacement means for providing a displacement signal indicative of the spatial displacement of the probe over the test item as the probe is moved over the test item and

a support structure for holding the displacement means over the surface of the test item,

such that, when the support structure is moved over  
20 the surface of the test item, a substantially constant distance is maintained between the displacement means and the surface of the test item.

25. The probe as claimed in claim 24 wherein the support structure and the displacement means are coupled in a manner so that the displacement means is moveable relative to the support structure.

26. The probe as claimed in claim 24 wherein the support structure has three legs that are arranged in a tripod arrangement.